



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/191,702	11/13/1998	JEFFREY K. O'HAM	PMS251910	8926

7590

07/21/2003

PILLSBURY MADISON & SUTRO  
INTELLECTUAL PROPERTY GROUP  
1100 NEW YORK AVENUE NW  
NINTH FLOOR EAST TOWER  
WASHINGTON, DC 200053918

EXAMINER

LEUNG, JENNIFER A

ART UNIT PAPER NUMBER

1764

DATE MAILED: 07/21/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/191,702

Applicant(s)

O'HAM, JEFFREY K.

Examiner

Jennifer A. Leung

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 May 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5,7,8,10-12,14,15,17-19 and 36-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,7,8,10-12,14,15,17-19 and 36-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's amendment submitted on May 12, 2003 has been received and carefully considered. Claims 3 and 6 have been cancelled. Claims 1-2, 5, 7-8, 10-12, 14-15, 17-19 and 36-39 remain active.

### *Response to Arguments*

2. Applicant's arguments, see page 3, paragraph 2, filed May 12, 2003, with respect to the rejection of claims 1-3 and 17-18 under 35 U.S.C. 102(b) as being anticipated by Ibrahim (DE 42 29 428); the rejection of claims 1-3 and 17-18 under 35 U.S.C. 102(b) as being anticipated by McGill et al. (US 4,951,583); and the rejection of claims 1, 2, 12 and 18 under 35 U.S.C. 102(b) as being anticipated by Noland et al. (US 5,072,674), have been fully considered and are persuasive, and therefore said rejections have been withdrawn.

3. Applicant's arguments filed May 12, 2003, with respect to the rejection of claims 1-2, 5, 7-8, 10-12, 14-15, 17-19 and 36-39 under 35 U.S.C. 103(a) as being unpatentable over Kant et al. (US 5,656,494) as the primary reference, in view of secondary references, have been fully considered but they are not persuasive. On page 3, paragraph 3+, Applicants assert,

"... the direction of gasflow in Horn is **downwards** whereas the direction of gasflow in Kant et al. is **upwards**. Consequently, it is respectfully submitted that there is no motivation to combine these references in the manner suggested by the Examiner."

However, the Examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed

invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the use of manifolds for directing fluid flow upstream or downstream of a given apparatus is well known to one having ordinary skill in the art. The reference of Horn evidences this conventional knowledge and further teaches the incorporation of manifolding with a biomass air filtration system illustrated in FIG. 1 and 2, which is similar in structure to the biofilter system disclosed by Kant et al. Although the preferred operation of the Kant et al. biofilter is opposite to the operation of the Horn biofilter with regards to the gas flow direction, the teaching that is to be gleaned from the Horn reference is that the provision of a manifold, without regard of a given gas flow direction, enables the expansion of biomass air filtration systems. (Horn teaches, "... biomass filtration system 29 can be readily expanded to handle still more air passage therethrough, for example by extending manifolds 50 and 51 to accommodate still more tanks." column 5, line 66 to column 6, line 28). In any event, as disclosed in column 3, lines 28+ of Horn, conventional biomass air filtration systems generally operate with an upward gas flow. Therefore, the apparatus of Horn, although disclosed as comprising a "preferable" arrangement of gas flow from the top downward, is admittedly capable of operating with the gas flow from the bottom upward.

#### ***Claim Objections***

4. Claim 1 is objected to because in line 10, the phrase ", and said bottom part being capable of supporting said matrices" should be omitted, since the limitation is redundant, as set forth in lines 8-9. Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 2, 5, 10-11, 14, 17-19, 36 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kant et al. (U.S. 5,656,494) in view of Horn (U.S. 5,635,394).

With respect to claims 1 and 17, Kant et al. (FIG. 1, 6) disclose an apparatus comprising:

- (i) a vessel defined by one or more removable trays **12**, wherein trays **12** comprise a bottom part **34** and peripheral sidewalls **32** extending therefrom, bottom part **34** being structured so as to define orifices **38**, bottom part **34** being capable of supporting media (FIG. 2; column 3, lines 19-24; column 5, lines 30-37);
- (ii) a vapor space defined by cap **26** with a gas outlet **48** and corresponding conduit for removal of gases, positioned on top of said vessel (column 4, lines 29-36); and
- (iii) a means for heating said interior ("parameters such as temperature... may be controlled..."; column 7, lines 39-57).

However, Kant et al. is silent as to whether structure (ii) may comprise specifically a "manifold". Horn teaches a system of biofilters **30** wherein a plurality of biofilters (FIG. 1) may be connected via manifolds **50**, **51**. It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a manifold to the structure (ii) in the apparatus of Kant et al. because a manifold would allow for the system to be readily expanded to handle more air passage and accommodate more [vessels], as taught by Horn (column 6, lines 24-27).

With respect to claim 2, Kant et al. further disclose a means **106** for generating a vacuum, inherently connected to the manifold of the modified apparatus (FIG. 10; column 8, lines 53-57).

With respect to claim 5, Kant et al. (FIG. 1, 2) further disclose said vessel has a bottom part 28 and peripheral side walls 32 extending therefrom, each of said peripheral sidewalls 32 being at least partly defined by said one or more removable trays 12.

With respect to claim 10, Kant et al. (column 5, lines 32-34) disclose trays 12 may comprise virtually any size, and therefore it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to select an appropriate loading capacity (i.e. at least about 2.5 cubic yards) for the tray in the modified apparatus of Kant et al., since changes in size involve only ordinary skill in the art. *In re Rose*, 220 F.2d 459, 463, 105 USPQ 237, 240 (CCPA 1955).

With respect to claims 11 and 39, Kant et al. disclose trays 12 comprise flanges 20, which function as gripping points by which the trays 12 may be lifted by light equipment such as a fork-lift (column 5, lines 59-64). Although Kant et al. are silent as to specifically "pockets", it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to provide "pockets" for the gripping points in the modified apparatus of Kant et al., since substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

With respect to claim 14, Kant et al. (FIG. 1) disclose a gas tight seal may be achieved between cap 26 and tray 12 by means of an O-ring or gasket 16 (column 3, lines 33-36), thus sealing the manifold to the vessel in the modified apparatus. Although Kant et al. are silent as to a "heat resistant" gasket, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to select a heat resistant gasket in the apparatus of

Art Unit: 1764

Kant et al., since substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958), and heat resistant gaskets are well known in the art as sealing means in heating apparatus.

With respect to claims 18 and 36, Kant et al. (column 3, lines 24-27; 38-43) disclose the apparatus may be permanently mounted (on-site) as well as mobile (readily transportable).

With respect to claim 19, Kant et al. (FIG. 1) disclose cap 26 with outlet 48 is not attached to vessel 12, and thus inherently, the manifold of the modified apparatus is not attached to said vessel.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kant et al. (U.S. 5,656,494) in view of Horn (U.S. 5,635,394), as applied to claim 1 above, and further in view of Wellford, Jr. (U.S. 3,706,662).

Although Kant et al. are silent as to whether the bottom part 34 of tray 12 may comprise a screen, such that the orifices in the bottom part are formed by the screen, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to provide a screen for the bottom part in the modified apparatus of Kant, since the use of screens for the retaining of solid media is conventionally known in the art, as evidenced by Wellford, Jr. (FIG. 1, 2), who teach a container 12 for holding material 20, wherein the bottom of the container comprises a grate 44 (inherently a "screen") capable of supporting the material. Also, it has been held that substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

Art Unit: 1764

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kant et al. (U.S. 5,656,494) in view of Horn (U.S. 5,635,394), as applied to claim 1 above, and further in view of Dean, Jr. et al. (U.S. 4,978,616).

Although Kant et al. are silent as to whether the bottom part 34 of tray 12 comprises a slotted configuration, such that the orifices are formed by the slots, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to provide a slotted bottom for the bottom part in the modified apparatus of Kant et al., since the use of slotted tray bottoms is conventionally known in the art, as evidenced by Dean, Jr. et al., who teaches the conventionality of using porous plates for supporting solid beds and provides a specific example of a slotted tray (column 1, lines 36-38; column 9, lines 6-10; FIG. 5). Also, the substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kant et al. (U.S. 5,656,494) in view of Horn (U.S. 5,635,394), as applied to claim 1 above, and further in view of Malone (U.S. 5,126,042).

The collective teachings of Kant et al. and Horn are silent as to the apparatus comprising a means for mechanically agitating the media within the vessel, positioned in said interior and connected to the vessel. Malone teaches a means 5 (FIG. 1) for mechanically agitating solid media within a vessel. It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a means for mechanically agitating to the modified apparatus of Kant et al., on the basis of suitability for intended use and absent showing unexpected results,



Art Unit: 1764

since the agitation helps provide adequate suspended solids filtration as well as adequate media surface area for treatment of waste, as taught by Malone (column 2, line 51 to column 3, line 51).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kant et al. (U.S. 5,656,494) in view of Horn (U.S. 5,635,394), as applied to claim 1 above, and further in view of Weyand et al. (U.S. 5,300,137).

Kant et al. are silent as to the manifold comprising a filter. Horn teach that in certain situations, i.e. when air is directed from the bottom up, loose material in the top of the bed can easily be picked up in the air stream and blown through the system (column 3, lines 41-49). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a filter to the modified apparatus of Kant et al. in order to prevent passage of such loose material through the system. Although a 1 to 100 micron dry filter is not specified, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to provide such filter, on the basis of suitability for intended use and absent showing unexpected results, since such filters are known in the art of filtration. To illustrate conventionality, Weyand et al. teach a gas cleaning means **15, 17** connected to a manifold **10, 19, 54** wherein the means may comprise "activated carbon columns, hepafilters, scrubbers, or any other device capable of removing residual vapors and submicron particles [thus inherently capable of removing the larger, 1 to 100 micron sized particles] from the effluent gas stream," (column 11, lines 64-column 12, line 12; FIG. 2).

10. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kant et al. (U.S. 5,656,494) in view of Horn (U.S. 5,635,394), as applied to claim 1 above, and further in view of Pare et al. (U.S. 5,389,248).

Art Unit: 1764

Kant et al. disclose heating means ("parameters such as temperature... may be controlled..." column 7, lines 39-57) but are silent as to whether the means may be positioned in a manner to allow heat to enter said vessel at a position below the trays. In any event, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made select the placement of the heating means as such, depending on the intended use of the apparatus and absent showing unexpected results. *In re Kuhle* 188 USPQ 7 (CCPA 1975). Such placement of the heating means is known in the art, as evidenced by Pare et al., who teach a bioreactor unit comprising a plurality of trays 60, 62, 64, wherein a heating means 240, 242, 208 (FIG. 4) is positioned such that heat enters the vessel at a position below the trays.

11. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kant et al. (U.S. 5,656,494) in view of Horn (U.S. 5,635,394), as applied to claim 1 above, and further in view of Almeda, Jr. (U.S. 4,284,000).

Kant et al. (column 5, lines 59-64) disclose a means such as a fork-lift for lifting the trays via flanges 20 but is silent as to the means comprising a hydraulic cylinder. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a hydraulic cylinder in substitution of the fork-lift for lifting the manifold in the apparatus of Kant et al. because the use of hydraulic cylinders for as a means for lifting objects is conventionally known in the art, as evidenced by Almeda, Jr. (hydraulic means 28). Furthermore, the fork-lift and hydraulic cylinder provide substantially the same function of lifting, and it has been held that the substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

Art Unit: 1764

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

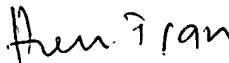
\* \* \*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is 703-305-4951. The examiner can normally be reached on 8:30 am - 5:30 pm M-F, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jennifer A. Leung  
July 15, 2003 

  
**HIEN TRAN**  
**PRIMARY EXAMINER**